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Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554

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In the Matter of	)	
	)	
The Development of Operational,	)	
Technical and Spectrum Requirements	)	WT Docket No. 96-86
for meeting Federal, State and	)	
Local Public Safety Agency	)	
Communication Requirements	)	
Through the Year 2010	)	

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COMMENTS OF ITS AMERICA

The Intelligent Transportation Society of America ("ITS America"), by its counsel, hereby submits its Comments on the Notice of Proposed Rulemaking ("NPRM") released by the Commission in the above-captioned proceeding. As set forth herein, a significant portion of the Intelligent Transportation System ("ITS") program is devoted to enhancing the safety of the nation's surface transportation systems. The public safety components of ITS include not only an array of new technologies and services for safety and welfare of the traveling public and privately-owned vehicles, but also for emergency service providers and other traditional public safety entities and their vehicles. Because of the numerous public safety-related functions associated with ITS services and technologies, ITS America is keenly interested in this proceeding and applauds the Commission's initiative.

The NPRM commences the Commission's evaluation and assessment of the present and future needs of public safety wireless communications, generally seeking comment on, among other issues:

> (1) regulatory approaches that will facilitate the development of interoperable equipment and technologies; (2) the service features and system requirements essential to the effective performance of public safety functions; (3) technological issues regarding the enhancement and improvement of public safety wireless communications; [and] (4) means of allocating spectrum for public safety agencies to ensure that they have adequate spectrum to perform their functions.[1]

In particular, the Commission seeks comment on proposed new definitions for public safety and public safety services and interoperability, interoperability needs and options, operational requirements, technology issues, and spectrum allocations. ITS America's comments focus on the first

[1] NPRM at ¶4.

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two of these areas.

I. Background

Incorporated in August, 1990, ITS America is a non-profit educational and scientific organization whose purpose is to coordinate and promote the research, development and deployment of ITS in the United States. With a membership composed of federal, state and local government, private industry, and academic interests, ITS America is a public/private partnership and serves as a utilized Federal Advisory Committee to the U.S. Department of Transportation ("DOT").[2] Pursuant to the Intermodal Surface Transportation Efficiency Act of 1991 ("ISTEA")[3], Congress established a national ITS program in the DOT, defining the program's mission to achieve, among other things: (1) the widespread implementation of ITS to enhance the capacity, efficiency, and safety of the highway system as an alternative to constructing additional capacity; (2) the enhancement of safe and efficient operation of the nation's highway systems with a particular emphasis on aspects of systems that will increase safety; and (3) the reduction of societal, economic, and environmental costs associated with traffic congestion.[4]

In ISTEA, Congress also directed DOT to develop a strategic plan for ITS, national standards for implementation to promote ITS compatibility and interoperability throughout the states, and a prototype of a fully automated highway by 1997. Finally, Congress authorized funding of $659 million to test and deploy ITS systems.

ITS America and DOT have worked jointly to fulfill the mandates of ISTEA. In July of 1992, ITS America published a strategic plan that provides goals, objectives and milestones for

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[2] The views expressed herein are those of ITS America and are not necessarily the views of the individual members of the Society.

[3] 105 Stat. 1914, 102 P.L. 240 (1991).

[4] *Id.* at §6052.

ITS development for the next 20 years. The plan, which grew out of a consensus process involving the public, private and academic sectors, served as the basis for DOT's five-year strategic plan submitted to Congress pursuant to ISTEA in 1992. From 1993-1995, ITS America and DOT worked together to develop a National Program Plan that delineates specific tasks to be accomplished in order to realize the goals of the strategic plan. Finally, from 1993 to the present, ITS America and DOT have been developing a multi-volume national ITS "architecture." The architecture, which was recently completed, describes fundamental guidelines for the design of intelligent transportation systems that will employ emerging communications, information and transportation technologies to improve the safety and efficiency of use of the surface transportation infrastructure in the U.S.

II. Comments

Reducing the number and severity of accidents, reducing congestion due to incidents, and enhancing traveler security are the overall public safety goals being addressed by ITS. ITS technology will satisfy these goals by performing the following specific safety-related functions described in the ITS National Program Plan:

- improving on-board system monitoring
- reducing the number of impaired drivers
- enhancing driver performance
- enhancing vehicle control capability
- improving traffic safety law enforcement
- smoothing traffic flows
- improving emergency and roadway services responsiveness
- improving passenger protection
- improving response to hazardous materials (HAZMAT) incidents
- improving incident management
- improving incident information to drivers
- improving the availability of communications devices
- reducing vehicle theft
- increased monitoring of transportation facilities.

Given the obvious impact that this proceeding will have on the ITS industry's ability

to implement these functions, ITS America and the DOT have been active participants in the Public Safety Wireless Advisory Committee (PSWAC). ITS America whole-heartedly supports the conclusions reached in the PSWAC Final Report[5] regarding specifically the new proposed definitions of Public Safety and Interoperability[6] and the need for additional spectrum to support ITS services.[7] Moreover, ITS America and the Joint Program Office (JPO) in the DOT have undertaken significant effort to determine which of the operational requirements being generated by the ITS program have a significant public safety-orientation, and the nature of the interoperability requirements with other public safety entities, including the definition of public safety. Each of these areas is discussed below.

A. Definition of Public Safety.

ITS America fully supports the Commission's proposal to adopt the PSWAC definitions for Public Safety, Public Safety Services, Public Safety Service Provider, Public Safety Support Provider and Public Services. The Commission and the PSWAC have correctly recognized that the existing classifications and eligibility requirements for the Public Safety Radio Services ("PSRS") based on a listing of services have negatively impacted the ability of public safety agencies to fulfill their missions. For example, under the current rules, it is unclear whether providers of critical, safety-related ITS user services are eligible for public safety frequencies because the services do not fit neatly into any one of the current services. ITS services would most likely fall under all of the individual

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[5] Final Report of the Public Safety Wireless Advisory Committee to the Federal Communications Commission and the National Telecommunications and Information Administration, September 11, 1996 ("PSWAC Final Report").

[6] See PSWAC Final Report at ¶ 4.3.

[7] *Id.* at ¶¶ 2.2.2.6, 4.1.15 and 4.4.20. In these sections, and in the PSWAC Spectrum Requirements Subcommittee Report, the PSWAC recommends that a proposed allocation in the 5.8 GHz band for ITS be finalized, that ITS Systems be developed in their own band allocations, and that public safety agencies and public service providers be permitted to request frequency assignments in bands allocated to ITS to perform public safety related functions.

radio services except perhaps the Forestry-Conservation Service. More significantly, and as recognized by the Commission, the current separate service divisions fail to include all the functions and responsibilities of the various public safety agencies or the public safety activities of utility, pipeline, petroleum and other entities providing essential public services.

Thus, under the new proposed definitions, State and local DOTs as well as highway maintenance organizations will continue to be considered Public Safety Service Providers and will be able to provide public safety-related ITS services. But more importantly for purposes of ITS deployment, other governmental entities and non-governmental private organizations that are properly authorized to provide such services will also fall under of the definition of Public Safety Service Provider. Moreover, the proposed new definitions further recognize the role of those governmental entities, and authorized non-governmental private entities, in supporting the delivery of public safety services by including those entities in the definition of Public Safety Support Provider. Finally, the definition of Public Services correctly incorporates those non-public safety entities who furnish, maintain, and protect the nation's basic infrastructures.

ITS America submits that adoption of these new definitions will significantly benefit the provision of public safety communications in general and ITS-related communications in particular. For example, entities operating as ITS independent service providers (ISPs) could be considered either Public Safety Service Providers or Support Providers when authorized by public safety organizations to offer safety-related ITS services. Examples of these services include processing automated mayday requests or offering route guidance to emergency vehicles. Treating such entities as public safety providers will speed the deployment of critical ITS safety-related services by promoting private investment in the provision of such services.

B. Interoperablility Definition, Needs and Options.

1. *Interoperability Definition*

The NPRM also recognizes the critical need for different public safety entities to be able to communicate with one another in a coordinated manner in order to better satisfy their missions.[8] The Interoperability Subcommittee of the PSWAC has attempted to promote interoperability by defining it in terms of both the type of the communications link (infrastructure dependent or independent) and the nature of the link (multi-jurisdictional and multi-disciplinary). ITS America fully supports the PSWAC's proposed definitions of these concepts as set forth in the NPRM.

For the public safety goals of ITS to be met, interoperability among agencies that can provide or need access to traffic flow, incident detection and response, emergency response and safety-related information is needed.[9] In the ITS context, this means interoperability between Traffic Management Centers (TMCs), Emergency Management Centers, and other public safety agencies and their personnel. TMCs will benefit by receiving real time traffic and incident information from mobile units operated by public safety and public service agencies. These agencies, in turn, will use ITS data to improve incident detection/response time and to aid in law enforcement. Public Safety agencies will also benefit from being able to make traffic control recommendations during incidents, thereby maximizing the efficiency and expediency of their response. Therefore, a consistent, automated path for transmitting this information between the field and public safety agencies and TMCs is needed.

Moreover, in most cases, multiple centers are in operation within a geographical region, requiring multi-jurisdictional interoperability across city, county, and state boundaries. Safety-related services involving commercial vehicle operations may also involve international boundaries (Canada and Mexico). Accordingly, ITS America supports all efforts aimed at promoting multi-jurisdictional

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[8] NPRM at ¶¶ 26-27.

[9] *See* PSWAC Interoperability Subcommittee Final Report at 100-105.

interoperability among public safety agencies.

2. *Interoperablility Needs.*

The NPRM further seeks comment on the need for interoperability for public safety communications in three contexts: day-to-day operations, mutual aid incidents, and task force operations.[10] ITS America supports the Commission's conclusions in this area and sets forth below the benefits to be received from interoperability with public safety communications systems in these contexts as they relate to ITS services.[11]

a. Day-to-Day Operations

The following ITS user services will benefit from interoperability with public safety communications systems for routine, day-to-day operations:

Automatic Collision Notification; Driver and Personal Security: These systems will be used to notify monitoring organizations that an incident or collision has occurred. The key requirement for this process will be an automated, electronic transfer function for routing the data from the monitoring agency to the public safety agencies.

Enroute Driver Information; Incident Detection: These systems will be used to inform drivers with in-vehicle ITS equipment of relevant traffic conditions. Traffic management agencies need access to real time incident, weather, and traffic data so drivers can be notified, while drivers of public safety vehicles will need to receive the notifications expeditiously over various communications links.

Emergency Vehicle Route Guidance: As with Enroute Driver Information, accurate, real time incident data must be available to traffic management agencies, and efficient routing information must be provided to drivers of public safety vehicles.

Emergency Vehicle Signal Priority; Priority Treatment for Transit: This service will enable adjustments to be made to traffic control devices to maximize the efficiency of the transportation systems, minimize response time by emergency service providers, and aid in law enforcement. TMCs will need real-time incident data in a format that can be processed by traffic control decision-making systems and will collect requests for traffic control that public safety vehicles and transit vehicles will need.

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[10] *Id.* at ¶¶ 28-31.

[11] These benefits are drawn from, and are more fully set forth in, the Interoperability Subcommittee Final Report, which ITS America also endorses. *See* PSWAC Interoperability Subcommittee Final Report at 100-105.

Public Travel Security: Alarm systems installed in transit stations, bus stops, and public transit vehicles will be monitored by private or public agencies depending on the location and scope of the system. Private agencies will need a communications path to notify public safety agencies when assistance is required.

On-board Safety Monitoring: Data monitoring and communications systems onboard commercial vehicles collect safety data pertaining to critical vehicle components, condition of the cargo, and the fitness of the driver. Law enforcement officials need to be notified of the vehicle, its location, and the nature of any safety violation requiring attention.

b. Mutual Aid Incidents and Task Force Operations

The following ITS user services will benefit from interoperability with public safety communications systems during mutual aid incidents such as major fires, accidents, chemical spills and other disasters and during joint emergency preparedness events or task force operations among local, regional, state and Federal agencies:

Route Guidance and Enroute Driver Information: Incident liaison officers and task force commanders will need to provide incident data to the traffic management agencies. These officers may make recommendations on data that drivers should receive.

Incident Detection and Management: The TMC will be making decisions about wide area traffic flow while the incident or task force commander makes decisions at the site of the incident. These decisions need to be closely coordinated.

Traffic Control: Incident liaison or task force commanders need to be informed of traffic control decisions made at the TMC that impact the area of operations. The commanders also need the ability to request specific traffic control measures be taken.

Enroute Transit Information: Incident liaison and task force commanders will need to provide incident data to the transit management centers and traffic management centers. These officers may make recommendations on data transmitted to transit vehicles.

Public Transportation Management: System operators will need accurate information from the incident liaison or task force commanders to verify that management recommendations produced the desired effects. The commanders needs the capability to dispatch these vehicles if large scale evacuations are required.

Public Travel Security: The incident and task force commanders may need access to data from wide spread security devices. Data connectivity is needed between these officers and the organization monitoring the security devices.

Hazardous Materials Incident Response: Applicable primarily to mutual aid incidents, the

incident commander needs access to all HAZMAT data collected by the responsible monitoring organization. The incident commander will need a portable reader if the HAZMAT vehicle has HAZMAT data stored in an on-vehicle Dedicated Short Range Communications (DSRC) transponder.

Emergency Vehicle Management (EVM): The incident and task force commanders need full access to this system, which would include a real time Geographic Information System display showing vehicle locations. Because the response will involve multiple agencies, the individual emergency vehicle tracking systems must be compatible.

Based on these benefits, the PSWAC Interoperability Subcommittee reached the following conclusions concerning interagency interoperability issues for ITS:

> 1) Standardized ITS data formats and interfaces are required to ensure that real time incident data can be shared by multiple agencies; 2) Agencies need an automated, electronic means of sharing incident data on a day-to-day basis; 3) Agencies need to develop policies to ensure that relevant data are shared with other organizations; and 4) Incident and task force commanders need full coordination capabilities with all affected traffic management centers. This will require voice/data/video connectivity over RF channels.

ITS America fully concurs with this assessment and submits that any actions taken in this proceeding should address these concerns.

3. *Interoperability Options*

The NPRM also seeks comment on the means by which to satisfy the interoperability requirements of public safety entities.[12] The following briefly describes the general means by which ITS services and devices could interoperate with public safety entities.[13]

Because, as explained above, ITS safety-related information must be accessible to field deployed units from multiple agencies on a local, regional and nationwide basis, public safety vehicles will need to be equipped with both wide-area and one-way broadcast-type ITS communications devices which transmit this information. Efforts are underway by various organizations to standardize the

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[12] *Id.* at ¶¶ 32-42.

[13] ITS America submits that parties interested in a more detailed description should review the relevant portions of the multi-volume ITS Architecture, copies of which are available from ITS America.

protocols for such devices. If successful, public safety field units will be able to receive data from numerous types of ITS devices without purchasing a different receiver for each system and for each region of operation. Public safety agencies will have the option of installing a data interface with a TMC, transit management center, or independent service provider, and integrating the required ITS-related information onto the public safety radio systems. If these systems have interoperable modes, then ITS information can be made interoperable provided the message formats are standardized.

ITS America encourages the public safety community to incorporate interoperability and compatibility with ITS services and devices in the deployment of their communications systems and encourages the Commission to adopt policies and rules consistent with these goals.

III. CONCLUSION

For the foregoing reasons, ITS America applauds the Commission's initiative in evaluating and assessing the present and future needs of public safety wireless communications. By adopting the proposed definitions of public safety and interoperability, and rules and policies which incorporate ITS-related interoperability needs and options, the Commission will greatly facilitate the deployment of the many ITS public safety-related user services and will help speed recognition of the important public benefits to be derived from those services.

Respectfully submitted,
INTELLIGENT TRANSPORTATION SOCIETY OF AMERICA

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